# ABSTRACT

An apparatus and method for encoding low-density parity check (LDPC) codes. The method for generating a low-density parity check code formed of an information-part matrix and a parity-part matrix comprises the steps of converting the information-part matrix into an array code structure and assigning a degree sequence to each submatrix column; extending a dual-diagonal matrix corresponding to the parity-part matrix such that an offset value between diagonals has a random value; lifting the normalized dual-diagonal matrix; determining an offset value for cyclic column shift for each submatrix of the lifted normalized dual-diagonal matrix; and determining a parity symbol corresponding to a column of the parity-part matrix.